

a semiconductor die of the flip-chip integrated circuit having an active circuit surface for interconnecting the semiconductor die to the packaging substrate wherein the active circuit surface is secured to an upper surface of the packaging substrate; and

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a thermocouple secured directly to the active circuit surface of the semiconductor die for measuring a temperature of the active circuit surface of the semiconductor die during a reflow process.

6. (twice amended) A thermal profiling device for a flip-chip integrated circuit comprising:

a packaging substrate of a flip-chip integrated circuit having a first surface and a second opposite surface;

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an opening passing through the second opposite surface and through the first surface of the packaging substrate;

a semiconductor die of the flip-chip integrated circuit having an active circuit surface for interconnecting the semiconductor die to the packaging substrate wherein the active circuit surface is secured to the first surface of the packaging substrate; and

a thermocouple secured directly to the active circuit surface of the semiconductor die through the opening for measuring a temperature of the active circuit surface of the semiconductor die during a reflow process.
